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# National Polar Bear Conservation Strategy for Canada

## August 2011

### **1. Summary:**

The central goal of the National Polar Bear Conservation Strategy is to contribute to the long-term maintenance of subpopulations of polar bear in Canada by taking into account all of the threats that face the species, and to increase the level of coordination between jurisdictions for the management of polar bear.

The threats and challenges associated with polar bear conservation are complex and wide-ranging. To address these in a meaningful manner, this Strategy is divided into two main parts: first, an over-arching strategy; and second, a series of annexes that provide an overview of how key conservation threats and challenges will be managed.

### **2. Historical Background:**

The polar bear (*Ursus maritimus*), *nanuq* in Inuktitut, has a special significance for northern Aboriginal people in Canada who have been harvesting the species for thousands of years. The polar bear is a top predator in the Arctic marine environment, sharing this role with humans, and it has played a key role in Aboriginal culture. The polar bear, like all the wildlife harvested in the North, is considered a renewable resource that provides nourishment and clothing, and that contributes to a deep respect for the land that is woven throughout their culture. In the spirit of this relationship, the role of Aboriginal people in the management of polar bears has also evolved over time, and with changing pressures.

Prior to European arrival, Aboriginal peoples hunted the polar bear for subsistence purposes, with up to 200kg of meat being provided from a single large animal, and with clothes from the skins providing protection from the extreme low temperatures. By the 1940's, interest in the hides of polar bears increased given expansion of the Hudson's Bay Company fur trade operations. At this point, the hunting of polar bears became an important economic by-product of the subsistence harvest, and thereby became one of few traditional resources that provided reliable income to hunters and communities.

### **3. Management:**

Canada has a special obligation with respect to the conservation of polar bear because an estimated two-thirds of the global population occurs in subpopulations that are within, or shared with, Canada. Canada is signatory to the 1973 *Agreement on the Conservation of Polar Bears* (Appendix 1) and Canada's *Letter of Interpretation* upon ratification of the Agreement (Appendix 2). The 1973 international Agreement stipulates that polar bear will be managed "... *in accordance with sound conservation practices...*". A cooperative approach to research and

management is necessary because nine of Canada's thirteen polar bear subpopulations (Annex 2, Figure 1) are shared between domestic and/or international jurisdictions.

In Canada, the management authority for polar bears lies mainly with provincial, territorial and federal governments who are informed and advised by constitutionally recognized land claim bodies and Aboriginal governments. Canada's commitment to a cooperative approach to polar bear research and management began over 40 years ago with the establishment of the Federal/Provincial/Territorial Polar Bear Administrative Committee (PBAC) and the Polar Bear Technical Committee (PBTC). These bodies represent successful cooperative efforts for the management and monitoring of polar bear, respectively, and have been instrumental in facilitating collaborative research and coordinated conservation initiatives.

In addition, the signing of comprehensive land claims agreements with Canada's Aboriginal peoples has fundamentally altered and provided a new legal foundation and management regime for the conservation and management of polar bear in northern Canada. These Aboriginal Authorities and Wildlife Management Boards (WMBs) now cover virtually all of the Canadian Arctic. The roles of the Aboriginal organizations and WMBs, with management authorities and responsibilities for polar bear conservation, are essential. The traditional knowledge of the Aboriginal peoples of Canada is likewise essential in the management of Canada's polar bear populations.

To further support the efforts of the jurisdictions and the relevant Aboriginal Authorities, this Strategy will serve as guidelines for the conservation of polar bear in Canada through annexes developed by the PBAC and the PBTC.

This Strategy does not supersede provisions identified under domestic laws, land claims agreements, existing memoranda of understanding and agreements, and international obligations. The Strategy recognizes certain legal obligations of Canada and the provincial and territorial governments with respect to Aboriginal Authorities and WMBs created by the land claims agreements. Agreement with the advice contained within this Strategy will strengthen overall coordination of conservation actions for polar bear in Canada.

#### **4. Status and Conservation in Canada:**

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), established in 1977, is the independent body responsible for identifying and assessing species considered to be at risk in Canada. COSEWIC uses the best available information, including science, Aboriginal Traditional Knowledge and community knowledge. The assessments made by COSEWIC are the basis for consideration of legal listing under the federal *Species at Risk Act* (SARA).

Polar bear were originally designated as Not at Risk by COSEWIC in 1986. This was changed to a designation of Special Concern in 1991, and this conservation status was reviewed and confirmed in 1999, 2002 and 2008. Consultations concerning listing the polar bear as a species of Special Concern under SARA were completed in 2011. As a legislated requirement,

COSEWIC reviews species assessments at least every 10 years, or earlier if new information suggests a change in status may be warranted.

Assessments by the General Status of Species in Canada (a program that operates under the auspices of the Canadian Endangered Species Conservation Council, created in 1997 under the *Accord for the Protection of Species at Risk and Framework for the Conservation of Species at Risk in Canada*) are completed every five years. Assessments done under the General Status framework in 2000, 2005 and 2010 all designated the polar bear as a Sensitive species. In addition, the PBTC assesses the status of polar bear subpopulations on an annual basis.

Table 1. Provinces and territories have a variety of processes and legislation for conserving species at risk.

<b>Province/Territory</b>	<b>Legislation</b>	<b>Designation</b>	<b>Effective Date of Listing</b>
Newfoundland & Labrador	<i>Endangered Species Act</i>	Vulnerable**	2002
Manitoba	<i>Endangered Species Act</i>	Threatened	2008
Ontario	<i>Endangered Species Act, 2007</i>	Threatened*	2009
Québec	<i>Loi sur les Espèces Menacées ou Vulnérable</i>	Vulnérable**	2009
Northwest Territories	<i>Species At Risk (NWT) Act</i>	<i>No listing***</i>	-
Nunavut	<i>Nunavut Wildlife Act</i>	<i>No listing</i>	-
Yukon	<i>Yukon Wildlife Act</i>	<i>No listing</i>	-

\* = up-listed from Special Concern in 2009

\*\* = equivalent to Special Concern under SARA

\*\*\* = Assessment expected in October 2012

The Federal/Provincial/Territorial systems provide for flexibility and create allowances for attention to be focused where it is most needed.

## **5. Objectives:**

The purpose of the Strategy is to promote coordination and provide guidance for polar bear management and conservation of actions across jurisdictions and with co-management partners within Canada. By doing this, the Strategy will provide the framework to accomplish the following objectives:

5.1 Promote actions that contribute to the long-term maintenance of polar bear subpopulations, both within Canada and shared with other countries.

5.2 Minimize threats to polar bear and their habitat resulting from human activities.

5.3 Ensure that best practice standards for polar bear management and research are adopted and respected, including the continued development of non-invasive methodologies, and the incorporation of Aboriginal Traditional Knowledge.

## **6. Threats to Polar Bear Conservation:**

The following is a list of current threats facing polar bear. It is recognized that the relative impact of these threats on polar bear subpopulations may change, and that new threats may be identified in the future.

**6.1 Climate change:** Environmental change is the most critical long-term threat to polar bear and their habitat. Projected warming over much of their range and the associated reductions in the extent and thickness of multi-year sea ice, and the duration and thickness of annual sea ice, will have both direct and indirect effects on polar bear. Direct effects include loss of habitat (i.e. extent and composition of sea ice), while indirect effects include ecosystem level changes on availability in prey species (such as seal), separation from terrestrial denning areas and refugia, contaminant transfer, and expansion of human activities. Climate change will be an underlying driver of many of the other threats listed below. As such, there is a need for focused research to understand the ecological conditions that are important to polar bear, and that inform conservation and management actions.

**6.2 Harvest in excess of established Total Allowable Harvest (TAH):** In most jurisdictions, and in the majority of cases in Canada, harvest is well-managed under a quota system. In Québec, there is no formal quota system, on account of the James Bay and Northern Québec Agreement (JBNQA). However, Aboriginal nations of Nunavik are responsible for the long-term preservation of resources on the land, and the JBNQA includes mechanisms toward the conservation of polar bear in this province. Coordinated harvest management, including the assignment of Total Allowable Harvest levels for each subpopulation (or acceptable equivalent mechanisms in Québec), should reduce or remove the threat of unsustainable harvest. In situations where harvest does not permit the long-term maintenance of polar bear, coordinated harvest management within and between jurisdictions needs to be strengthened.

**6.3 Contaminants:** Polar bear are exposed to environmental contaminants including both organic (e.g., organochlorines and brominated flame retardants) and inorganic (e.g., mercury) substances that have effects at both the individual, and possibly, at the population level. Additional contaminants from marine spills could seriously impact local populations. Emerging contaminants are also a concern, and it is recognized that environmental change may alter contaminant pathways. For example, transport and delivery of contaminants to Arctic ecosystems are likely to be enhanced as contaminants that are currently sequestered in glaciers and permafrost are released. Although the effects of pollutants on polar bear are only partially understood, recent studies suggest that contaminants are likely to have physiological effects, including altered hormone levels, as well as immune system and reproductive effects.

**6.4 Resource industry activities:** Exploration and development for resource extraction (e.g., metals, minerals, oil and gas) has the potential for direct mortality and disturbance of bears,

including habitat alteration and disturbance of bears in maternity dens. Environmental change will likely provide greater industrial access to resources, and together with an increase in industrial activities, the frequency of human-bear conflicts may increase (see point 6.6 below).

**6.5 Shipping:** Disturbance and the potential for shipping accidents (e.g., spills) associated with increasing levels of shipping activity in the Arctic, including community re-supply, industrial shipping and tourism, present increasing threats to polar bear. Environmental change will likely increase the duration of shipping seasons and open up additional, previously unnavigable, routes.

**6.6 Human-bear conflicts:** Increased interaction between humans and polar bear is already occurring in northern communities; further human-bear conflicts are likely to arise in the future as tourism and other anthropogenic activities increase, and sea ice continues to change. Human-bear conflicts may result in the destruction of property, danger to people and danger to bears due to human-caused harassment, or mortality in defense of life or property.

## **7. Challenges to Polar Bear Conservation:**

**7.1 Broad nature and interaction of threats:** There are a variety of challenges to polar bear conservation. In some cases, action to address threats goes beyond polar bears and their habitats and will require national and international cooperation by players beyond those traditionally involved in polar bear management. For example, global action is essential to reduce greenhouse gases in order to address climate change. Similarly, contaminant emissions, shipping and industrial activities are intertwined with global economic markets and involve a variety of international interests. Moreover, the identified threats cannot be considered as impacting polar bear in isolation from each other, and are not mutually exclusive. For example, in subpopulations where climate-induced habitat loss is causing declines, the concept of a sustainable harvest no longer applies (as *any* harvest would contribute to further declines). As such, one of the biggest challenges will be to manage the harvest and other human influences (e.g. industrial activities, shipping) in declining populations.

**7.2 Difficulty in obtaining information:** The effectiveness of polar bear conservation initiatives can only be assessed when there is reliable scientific, traditional and local knowledge on which to determine the status, trends, specific threats, and to identify important habitat in each subpopulation. Limited capacity, limited funding or inconsistent support for certain research activities all pose challenges to polar bear conservation.

**7.3 Habitat conservation:** The primary habitat for polar bear is sea ice as it provides the seasonal platform from which bears hunt, travel, mate, and, in some areas, den. Changes in sea ice regimes are impacting some polar bear subpopulations and it is anticipated that the impact of climate change will increase in coming years. In addition, throughout many parts of the polar bear range, terrestrial habitat is of critical importance for maternal denning, or as a summer refuge and migration corridors. However, while some important terrestrial habitat

areas receive varying degrees of protection as national, provincial or territorial parks or wildlife areas, the vast majority of the polar bear's extensive range currently receives no legal protection (although various initiatives are currently being explored by jurisdictions).

**7.4 Allocation of harvest:** Given a complex jurisdictional environment in which subpopulations are shared by more than one jurisdiction, there may be challenges associated with reaching consensus on the allocation of Total Allowable Harvest for this shared resource. This may be the result of differences of opinion and/or communication challenges in a northern environment.

## **8. Guiding Principles:**

The following principles guide conservation and management decisions, within their respective legislative frameworks.

8.1 The goal of conserving polar bear for future generations is of paramount importance and will underlie decision making processes, given that this species is of significant social and cultural value, globally, to all Canadians, and particularly to northern Aboriginal peoples.

8.2 Harvesting of polar bear is a vital cultural activity for many northern Aboriginal peoples. Ensuring that the harvest of polar bear continues in a coordinated manner that follows conservation principles is an integral component of the collective Canadian management system.

8.3 Polar bear will be managed at the subpopulation level, and their status will be assessed regularly to ensure that information is available for timely conservation, and towards long-term sustainability.

8.4 The best available scientific data, along with local and traditional knowledge, will be used to inform conservation and management decisions and actions.

8.5 Conservation and management decisions and actions will take global climate change into account, where appropriate.

8.6 Where there are threats of serious or irreparable damage to polar bear subpopulations, lack of certainty will not be a reason for postponing reasonable or precautionary conservation measures.

8.7 Management frameworks within jurisdictions will be respected; these include co-management regimes, federal, provincial and territorial legislation, land claim agreements, and inter-jurisdictional agreements.

8.8 Research and management of shared subpopulations is a joint responsibility, with accommodation for consultation requirements and legislative processes for the responsible jurisdictions, wildlife management boards, and agencies.

8.9 Management actions will be developed and implemented by responsible jurisdictions and wildlife management boards with appropriate collaboration and consultation with Aboriginal governments and communities. These will be based on effective conservation practices and will reflect any relevant Aboriginal land claim or Aboriginal treaty rights.

## **9. Framework:**

9.1 The PBAC provides a forum for provincial, territorial and federal jurisdictions to work together to manage polar bears, and to ensure that Canada fulfills its obligations to the *Agreement on the Conservation of Polar Bears*. In this capacity, the PBAC plays a key role in national coordination and cooperation within and between jurisdictions. The PBAC Terms of Reference are included in this document as Appendix 3. As per the PBAC Terms of Reference, the PBTC will provide a forum for sharing technical advice that, in turn, will be reported back to the PBAC. The PBTC Terms of Reference are included in this document as Appendix 4.

9.2 For shared populations, Memoranda of Understanding (MOUs) or user-to-user agreements may be developed in accordance with land claim agreements and respective of jurisdictional protocols or inter-jurisdictional agreements. Such agreements will act as mechanisms to reach concurrence on management objectives, Total Allowable Harvest and allocation. Some such agreements are already in place (e.g. Inuvialuit-Inupiat Agreement for the shared Southern Beaufort Sea subpopulation – 1988; MOU between Greenland, Nunavut and Canada for the shared Kane Basin and Baffin Bay subpopulations - 2009). Jurisdictions will work together through MOUs or equivalents.

9.3 Subpopulations are delineated based on the best available scientific and traditional knowledge related to the movements and genetics of polar bear, as well as management considerations (Annex 2, Figure 1). The term “subpopulation”, as used in this document, is consistent with its use by the PBTC, the International Union for the Conservation of Nature (IUCN)/Species Survival Commission (SSC) Polar Bear Specialist Group (PBSG), and the international community. All jurisdictions affected by subpopulation changes will be involved in the decision process related to boundary changes (Annex 3). In the case of disputes, the matter will be forwarded to the responsible Ministers.

9.4 To assess both the potential risk of given threats to polar bear and the effectiveness of any conservation actions, monitoring data are required. Repeated, long-term monitoring of subpopulations is required for detection and understanding of changes in status of polar bear. Jurisdictions and wildlife management boards, where appropriate, will coordinate efforts to ensure that population inventories of each subpopulation are completed, and will commit to conducting the necessary monitoring. Timelines for inventories and other subpopulation monitoring will take changing threats to polar bear into account, and will be completed as needed. Canada’s subpopulation inventory schedule (Annex 1) will be considered a guideline for monitoring.

9.5 The jurisdictions will make every reasonable effort to agree on the interpretation and application of this Strategy. Differences of opinion in the interpretation and application of the Strategy will be resolved, to the extent practicable, at a working level, through reasonable efforts taken in good faith. However, if the difference is not resolved, the relevant jurisdictions may refer the matter to the PBAC for advice. Advice from the PBAC is not binding on the parties.

9.6 Jurisdictions will continue to improve methods of collecting scientific data that minimize the impacts on polar bear and enhance incorporation of Aboriginal Traditional Knowledge into management decisions.

9.7 Appropriate action will be taken to protect polar bear habitat with special attention given to denning and feeding sites.

## **10. Implementation:**

Although climate change is the most critical threat facing polar bear and their habitat, mitigation of climate change is beyond the scope of a polar bear conservation strategy. Large-scale climate change actions will instead be pursued through the appropriate regional, national and international fora. Of importance for jurisdictions is to ensure that polar bear related issues are being addressed at such fora, and that effects of climate change on polar bear are monitored and addressed. For the long-term conservation of polar bear, action on climate change is required.

In order to implement the Strategy, annexes that guide conservation actions will be developed. Annexes will focus on the changing threats and challenges to polar bear conservation that can be managed at a national or sub-national level. The format of annexes will be an overview of current practices, current status and rationale, and paths forward. Four annexes have been developed to date. Additional annexes will be developed as soon as possible.

*10.1* Annexes will be developed by the PBTC, reviewed by the PBAC, and provided as advice to the jurisdictions.

*10.2* Jurisdictions will make best efforts to undertake the necessary monitoring and science activities needed for polar bear conservation. Such actions may also involve federal agencies, where appropriate.

*10.3* The implementation of this Strategy is subject to the availability of funding within each jurisdiction.

*10.4* This Strategy, including annexes, will remain in effect for five years. After five years the Strategy will be reviewed by the PBAC

*10.5* Minor amendments to the Strategy can be made after unanimous agreement in writing by all PBAC members. Any proposed major changes will be forwarded to the responsible Ministers.

*10.6* This Strategy creates no binding legal obligations on the parties. It is meant as a statement of the intent of the parties to co-operate and is not enforceable in Canadian law.

**11. List of Annexes:**

*11.1* Annex 1: Monitoring: polar bear and their habitat

*11.2* Annex 2: Harvest Management

*11.3* Annex 3: Subpopulation Boundary Definition and Process for Change

*11.4* Annex 4: Glossary of Terms

**12. List of Appendices:**

*12.1* Appendix 1: Agreement on the Conservation of Polar Bears

*12.2* Appendix 2: Canada's letter of interpretation of the Agreement

*12.3* Appendix 3: Terms of Reference for the Polar Bear Administrative Committee

*12.4* Appendix 4: Terms of Reference for the Polar Bear Technical Committee

**Signature Blocks:**

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Hon. Peter Kent, Minister of the Environment, Government of Canada

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Hon. James Arreak, Minister of Environment, Government of Nunavut

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Hon J. Michael Miltenberger, Minister of Environment and Natural Resources,  
Government of the Northwest Territories

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Hon. Currie Dixon, Minister of the Environment, Government of Yukon

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Hon. Dave Chomiak, Minister of Conservation, Government of Manitoba

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Hon. Terry French, Minister of Environment and Conservation,  
Government of Newfoundland and Labrador

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Hon. Michael Gravelle, Minister of Natural Resources, Government of Ontario

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Hon. Nick McGrath, Minister for Intergovernmental Affairs, Newfoundland and Labrador

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Hon. Clément Gignac, Ministre des Ressources naturelles et de la Faune, Gouvernement du  
Québec

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Hon. Pierre Corbeil, Ministre de l'Agriculture, des Pêcheries et de l'Alimentation et Ministre  
responsable des Affaires intergouvernementales canadiennes

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Hon. Glen Sheppard, Minister of Lands and Natural Resources, Nunatsiavut Government

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Larry Carpenter, Chairperson, Wildlife Management Advisory Council (NWT)

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Peter Kusugak, Acting Chairperson, Nunavut Wildlife Management Board

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Johnny Oovaut, Chairperson, Nunavik Marine Region Wildlife Board

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Lindsay Staples, Chairperson, Wildlife Management Advisory Council (North Slope)

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Bruce Roberts, Chairperson, Torngat Wildlife and Plants Co-management Board

DRAFT

## **ANNEX 1.**

### **MONITORING: POLAR BEAR AND THEIR HABITAT**

#### **1. Overview:**

The objective of polar bear population and habitat monitoring is to obtain the key information needed to assess and manage the subpopulations of polar bear within Canada.

#### **2. Current practices:**

Subpopulation inventories provide quantitative estimates of population sizes and demographic parameters as well as other information used in population viability analyses. Accurate assessments of the status of polar bear subpopulations are necessary for both conservation and effective management. In 2011, the Conservation of Arctic Flora and Fauna (CAFF) Working Group of the Arctic Council began the development of a Pan-Arctic Monitoring Plan for polar bears, with involvement by the IUCN/SSC Polar Bear Specialist Group, the PBTC and the PBAC. Once completed, this plan will greatly inform Canada's monitoring of polar bear and their habitat.

Monitoring of polar bear is generally conducted by provincial, territorial and federal governments in collaboration and cooperation with each other, and with constitutionally recognized land claim bodies and Aboriginal governments, where appropriate.

Research to address broader ecological questions that apply across polar bear subpopulations (e.g., climate change effects, genetic studies, movement patterns, contaminants) are undertaken by various provincial, territorial, and federal governments, as well as academic researchers and other specialists.

In several jurisdictions, particularly those in which co-management processes have been established, traditional and user knowledge is beginning to be formally collected by user groups, wildlife management boards and jurisdictional governments, and incorporated into management decision making.

#### **3. Current status:**

The frequency of each subpopulation inventory is currently determined by each jurisdiction/agency and wildlife management board. While the various jurisdictions have been working towards a unified approach, there is currently not a consistent, integrated approach to either the timing or financing of monitoring studies across the various jurisdictions in Canada.

The types of information and samples collected in conjunction with monitoring inventories can vary among studies depending upon the specific questions of interest in each study. Comparisons

both within and across populations may be improved by the adoption of standardized sampling and data collection protocols.

The incorporation of traditional and user knowledge into management decisions would be improved by consistent approaches to the collection and documentation of such knowledge.

While studies are ongoing, there is currently limited information on sea ice, habitat, and other environmental characteristics with which to build adequate models at a polar bear-relevant scale in Canada.

#### **4. Path forward: Coordinated monitoring:**

As most subpopulations of polar bear are shared, monitoring can be coordinated by developing Memoranda of Understanding, user-to-user agreements etc. User-to-user agreements exist for almost all Canadian subpopulations and are being developed for the remaining subpopulations. A proposed inventory schedule for Canada's 13 subpopulations will serve as a living document and will accompany this annex. This schedule, that has been developed by the PBAC, Inuit organizations and wildlife management boards, will be updated as new information becomes available.

The PBTC will undertake analyses to recommend the optimum frequency of monitoring for each subpopulation, taking into account current population size, population status (i.e. rate of population change), current and future threats, and acknowledging that these variables will change over time. For shared subpopulations, monitoring actions will be done at the inter-jurisdictional level and will benefit from national coordination and planning.

The following guidelines will provide for a coordinated timeline, monitoring and sampling protocols for baseline monitoring, using both scientific and traditional user knowledge.

- 1) Various, systematic approaches can be used to inventory the subpopulations. Monitoring surveys will be done using a risk-based approach (i.e. high priority subpopulations will be surveyed more frequently than low priority subpopulations), as advised by the PBTC, reviewed by the PBAC and approved by the relevant jurisdictions.
- 2) Jurisdictions will collect information in a standardized way that will allow for comparisons within and among subpopulations. The standard methods will be developed based on advice from the PBTC and the PBAC.
- 3) From all human-caused bear mortalities, jurisdictions will collect biological samples and information that will be reported annually to the PBTC. The PBTC will develop recommendations regarding harvest data collection including a list of minimum requirements for population monitoring and assessment.

- 4) Jurisdictions and wildlife management board partners will encourage the collection and documentation of relevant traditional and user knowledge about polar bear and their environment to inform management decisions. Such information could include:
  - a.* Location and dates of polar bear sightings
  - b.* Observations of body condition, and sex and age class of bears
  - c.* Location of denning sites and other important bear areas
  - d.* Aspects of polar bear behaviour
  - e.* Polar bear – environment interactions (e.g. information about seals or sea ice)
  - f.* Historical and traditional perspectives on each of these information sources
  - g.* Cultural perspectives and traditional values for managing polar bear
  - h.* Other relevant information.
- 5) Annually, jurisdictions will provide information, in a consistent format, for each subpopulation to the PBTC in order to provide an updated assessment of population status.
- 6) Important denning habitat will be identified, and conserved.
- 7) Methods of collecting data that minimize impacts on polar bear, while providing the information that is required to compare and assess subpopulation status, will continue to be developed.
- 8) All harvest and bear capture data will be archived by Canada through the PBTC. Recognizing intellectual property rights and Access to Information legislation, data will be protected and ownership respected.

## ANNEX 2.

### HARVEST MANAGEMENT

#### 1. Overview

The objective of harvest management is to contribute to the conservation and long-term maintenance of subpopulations of polar bear in Canada.

#### 2. Current practices:

The primary management of polar bear is the responsibility of the provinces/territories, wildlife management boards, Aboriginal communities, guided in many regions by various land claims agreements and the federal government in some situations. Harvest occurs in Newfoundland and Labrador, the Northwest Territories, Nunavut, Ontario, Québec, and the Yukon. No harvest occurs in Manitoba.

In jurisdictions with a harvest of polar bear, the harvest is largely limited to Aboriginal people in accordance with the *1973 Agreement on the Conservation of Polar Bears* (Appendix 1) and Canada's *Letter of Interpretation* upon ratification of the *Agreement* (Appendix 2) and land claim agreements. In some jurisdictions, Aboriginal people may choose to allocate their hunting tags to non-resident hunters (guided by Aboriginal people on foot or by dog teams).

The harvest of polar bear that occurs in Newfoundland and Labrador, the Northwest Territories, Nunavut, and the Yukon is controlled through a quota system (Total Allowable Harvest, TAH). In Ontario, only First Nations hunters who are Treaty 9 members residing along the Hudson Bay and James Bay coast can legally harvest polar bear. There is a permissible kill of no more than 30 bears per year that is controlled by restricting the annual sale of hides under a trapper's licence to those hides with an official seal attached by the Ontario Ministry of Natural Resources. In Québec, the James Bay and Northern Québec Agreement (1975) restricts the taking of polar bear to Aboriginal peoples and ensures that they have exclusive access to a Guaranteed Harvest Level (GHL) of 62 bears per year, subject to the principles of conservation, before any sport or commercial activity would be permitted.

In jurisdictions with quotas, the TAH levels are set according to jurisdictional processes; in most instances these procedures are laid out in relevant land claims agreements. A general summary is provided below:

- In **Nunavut**, the TAH levels for the Nunavut Settlement Area are set by the Nunavut Wildlife Management Board (NWMB), subject to the final acceptance of the Minister of Environment (Nunavut). Hunting tags are allocated by the Regional Wildlife Organizations.
  - The NWMB considers both scientific information and Aboriginal Traditional Knowledge. This process is the same for subpopulations exclusively within Nunavut (GB, LS, MC, NW) and for the Nunavut portions of the shared subpopulations (BB, DS, FB, KB, NB, SH, WH, VM; Figure 1).

- In the Inuvialuit Settlement Region (**NWT/Yukon**) TAH is determined by the Wildlife Management Advisory Council - Northwest Territories [WMAC(NWT)] and the Wildlife Management Advisory Council - North Slope [WMAC (NS)], subject to final acceptance of the Government of NWT and the Yukon. Hunting tags are allocated by the Inuvialuit Game Council. All harvest of polar bear within the Yukon and the Northwest Territories occurs in the Inuvialuit Settlement Region.
  - For SB (shared with Alaska), the WMAC (NWT) and WMAC (NS) consider TAH recommendations developed through the Inuvialuit-Inupiat Agreement. The distribution of tags between Canada and Alaska is achieved through the Inuvialuit-Inupiat Agreement.
  - For NB and VM (shared with Nunavut), the WMAC (NWT) considers TAH recommendations with input from the Inuvialuit-Kitikmeot agreement.
- In **Newfoundland and Labrador**, the provincial Wildlife Act and regulations and the Labrador Inuit Land Claims Agreement provides the legislative framework for polar bear management. Within this framework, the Government of Newfoundland and Labrador (GNL) is responsible for the management of polar bears within the Province. Within the Labrador Inuit Settlement Area the Torngat Wildlife and Plants Co-management Board (TWPCB), in consultation with the Nunatsiavut Government, establishes, modifies and eliminates the TAH for polar bears. This decision of the TWPCB is subject to disallowance or variance by the provincial Minister. Pursuant to provincial legislation and regulations and the annual Polar Bear Hunting Order, the Province issues licenses, establishes the final TAH, seasons and management areas. Within the Labrador Inuit Settlement Area, Inuit have the exclusive right to harvest the TAH and the Nunatsiavut Government is responsible for the allocation of licenses.
  - DS is shared with Nunavut and Québec in Canada.
- In **Québec**, harvest is allocated exclusively to the Nunavik Inuit, Crees and Naskapis in respect of the James Bay and Northern Québec Agreement (JBNQA), which guarantees an annual harvest level of 62 bears. Harvest in Québec is subsistence-based, and Nunavik Aboriginal communities are obligated, under the JBNQA, to ensure the long-term preservation of resources on the land. Co-management between the Québec Government, Environment Canada and Aboriginal nations is realized under the authority of the Hunting, Fishing and Trapping Coordinating Committee. Additionally, the Nunavik Marine Region Wildlife Board is responsible, through co-management with appropriate jurisdictions, for polar bear management in the offshore area immediately surrounding Québec (as described in the Nunavik Inuit Land Claims Agreement).

The identification of sustainable harvest levels relates to target population sizes and trends. For most subpopulations, target population sizes correspond to the scientific estimates of the subpopulation size. In Nunavut, the target population sizes are identified in a series of MOUs between Nunavut communities sharing a given subpopulation. In some instances, the target population has been adjusted based on traditional knowledge and modeling.

Most jurisdictions have protection for females with cubs, bears in dens, and a 2:1 sex-bias in harvesting such that a higher proportion of the harvest is comprised of males.

Jurisdictions report all human-caused mortalities annually to the PBTC. The PBTC uses this information to provide the PBAC with an annual status report for all Canadian subpopulations.

In several jurisdictions, including Nunavut and the Northwest Territories, hunters are required to provide selected information and samples from harvested bears.

### **3. Current status and rationale:**

Even though many jurisdictions have established harvest management regimes, challenges remain in a few cases due to a lack of formal process for engaging jurisdictions in coordinated management actions. Recently, however, great effort has been made to coordinate and harmonize harvest management systems between jurisdictions with responsibilities for shared polar bear subpopulations, with special attention being paid to determination of subpopulation and harvest management goals, recommended Total Allowable Harvest, recommended harvest allocation and coordination of regulatory change schedules.

### **4. Path forward: Coordinated harvest management:**

When jurisdictions develop harvest management systems, they must follow provisions identified under domestic legislation, various land claims agreements, and international obligations. However, adherence to advice contained within this Strategy will strengthen the overall conservation of polar bear.

Some jurisdictions are developing inter-jurisdictional harvest management agreements that will provide further details concerning the formal processes for engagement, including the setting of target population numbers, as well as the determination and allocation of TAH.

The following guidelines will improve overall coordination of harvest management in Canada by describing a consistent process and timeline for the determination of TAH.

- 1) Management objectives, and target population sizes specific to each subpopulation will be identified by the relevant jurisdictional authorities according to established processes, including land claim agreement requirements, and taking into account all known threats to subpopulations.
- 2) All human-caused mortality (i.e., harvest, accidental, illegal, and defense of life or property kills) should be monitored and accounted for in population management actions.
- 3) The Acceptable Annual Harvest Rate of both males and females will be identified and allocated between the jurisdictions that share the subpopulation.

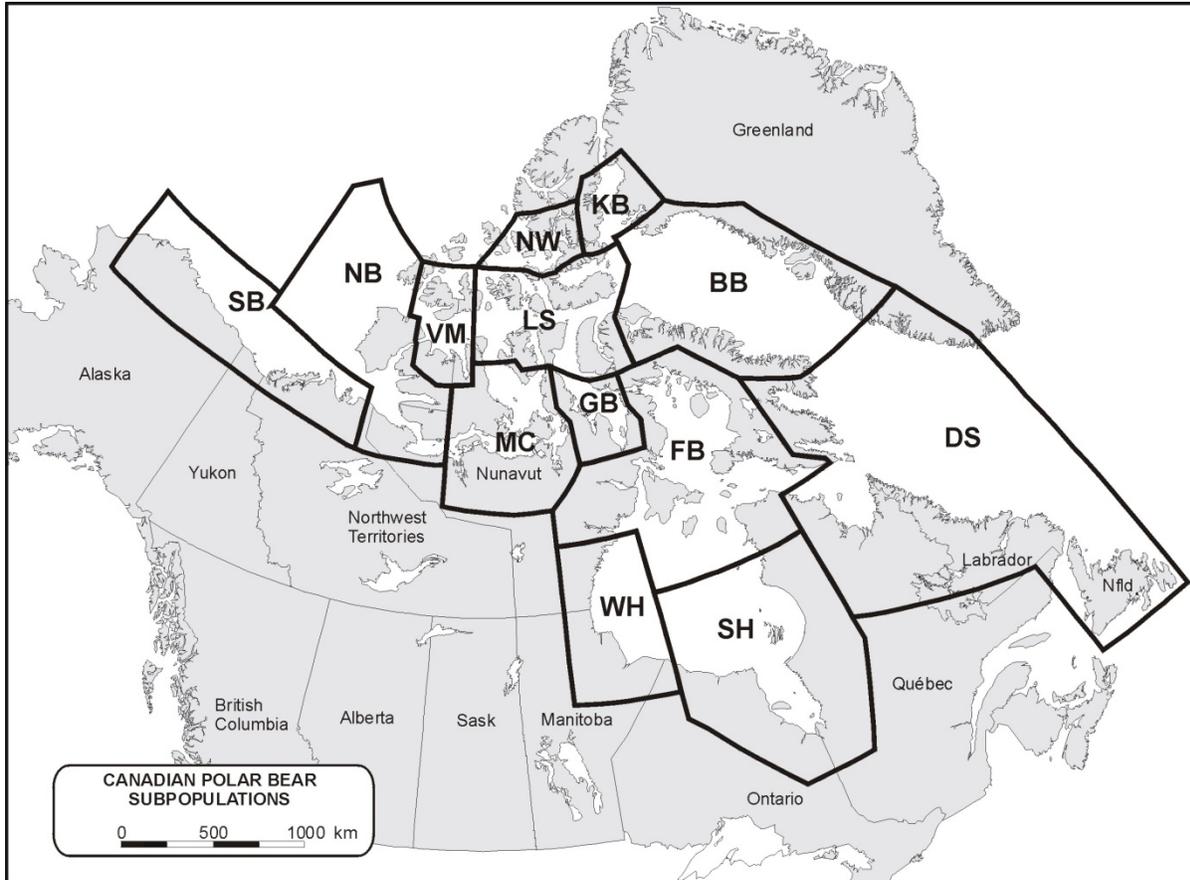
- 4) In the case of subpopulations shared with jurisdictions outside of Canada, international agreements or Memoranda of Understanding (MOUs) will be pursued. In the absence of an international agreement or MOU, the Canadian jurisdictions in question will adhere to the above practices as if an agreement or MOU were in place.
- 5) Cubs, and females with cubs that are occupying or constructing a den shall be protected from harvesting unless otherwise authorized by the relevant authorities within the jurisdiction, as appropriate.

#### **Schedule A: Total Allowable Harvest**

The following guidelines identify a consistent protocol for developing an acceptable Total Allowable Harvest (TAH) to be used by jurisdictions and wildlife management board partners, and considering processes established by the appropriate jurisdictions, where applicable.

1. The total TAH will be based on population sizes and management goals, using both western science and Aboriginal Traditional Knowledge.
2. Recommendations on the TAH for each of Canada's 13 subpopulations will be identified and consolidated annually at the PBTC meeting based on the best available information and as described in Canada's *Letter of Interpretation* (Appendix 2).
3. The recommendations on TAH levels will consider environmental impacts, environmental change, and the risks posed by the uncertainty of the demographic information.
4. The consolidated recommendations on TAH, the criteria for these recommendations and a comprehensive population status table will be provided annually to the PBAC by the PBTC for use by jurisdictions and wildlife management board partners.

**Figure 1.** Map of Canadian polar bear subpopulations. Abbreviations are as follows: BB - Baffin Bay; DS - Davis Strait; FB - Foxe Basin; GB - Gulf of Boothia; KB - Kane Basin; LS - Lancaster Sound; MC - M'Clintock Channel; NB - Northern Beaufort Sea; NW - Norwegian Bay; SB - Southern Beaufort Sea; SH - Southern Hudson Bay; WH - Western Hudson Bay.



## **ANNEX 3.**

### **SUBPOPULATION BOUNDARY DEFINITION AND PROCESS FOR CHANGE**

#### **1. Overview**

The objective of delineating polar bear subpopulation boundaries is to ensure that subpopulations are biologically meaningful, and to facilitate effective conservation and management practices. Future changes to the current boundaries may be necessary, taking into account new information, and acknowledging that changes to subpopulation boundaries may affect hunting quotas and allocations.

#### **2. Current practices:**

There are 13 defined Canadian polar bear subpopulations, of which one is shared with the United States and three with Greenland. Remaining subpopulations (that exist entirely within Canada) are commonly shared between more than one Province/Territory (Annex 2, Figure 1). The boundaries as outlined on Figure 1 (Annex 2) are accepted as the official subpopulation delineations. Any future changes will use these subpopulations as a baseline from which adjustments are made.

To date, subpopulation delineations have largely been based on movement patterns of radio-collared female polar bears and recapture/harvest of marked bears. Within most subpopulations, population dynamics appear to be determined from internal birth and death rates, rather than through emigration or immigration, suggesting that definitions are based on biologically meaningful information that are sufficient for management purposes.

Results from genetic studies vary, but often show high levels of gene flow between the various subpopulations (not just those in Canada), although recent data do suggest some degree of genetic structuring (e.g. Hudson Bay). Despite the fact that gene flow indicates that the currently-defined subpopulations are not closed populations, they provide a useful way to refer to bears from one region versus another, both within Canada and throughout the world (e.g. these same subpopulations designations are used internationally by the IUCN/SSC Polar Bear Specialist Group). The high degree of gene flow can likely be attributed to high mobility, large home ranges and the ability to respond to variation in sea ice and seal distributions. However, this connectivity between populations may change as sea ice changes.

COSEWIC designated all 13 polar bear subpopulations as one designated unit for conservation actions. This was determined because, while useful for describing local trends in population growth/decline, demographic parameters, behaviours, and for managing bears, the identified subpopulations cannot be considered distinct designated units based on the COSEWIC guidelines.

### **3. Current status and rationale:**

There is currently no agreed upon, formalized process for changing polar bear subpopulation boundaries. Questions remain regarding on what criteria changes to subpopulation boundaries should be based (e.g. western science, Aboriginal Traditional Knowledge, harvest management implications). Moreover, there are many implications associated with making changes to subpopulation boundaries, including the loss of ability to make historical comparisons, the need to update inter-jurisdictional agreements, and the implications on the Total Allowable Harvest for a given subpopulation.

### **4. Path forward: Coordinated boundary change:**

The following principles should guide any proposed changes to subpopulation boundaries:

*4.1* Any changes to subpopulation boundaries will be made to improve conservation, and using the best available scientific data and traditional knowledge. Changes will reflect current knowledge of the spatial organization and demographic processes of polar bear.

*4.2* Provisions in land claims agreements relating to polar bear management will be followed.

*4.3* Consultation with user groups will be undertaken as per land claims agreements.

## **ANNEX 4.**

### **GLOSSARY OF TERMS**

For the purpose of this Strategy, the below terms will require definition:

1. Aboriginal Authority
2. Defense kill
3. Denning habitat
4. Guaranteed Harvest Level
5. Harvest
6. Land claims agreement
7. Quota
8. Subpopulation
9. Subpopulation size
10. Target Population Size
11. Total Allowable Harvest
12. Wildlife Management Board

#### **Aboriginal Authority**

Any organization, board or other body established under a land claims agreement that is authorized by the agreement to perform functions in respect of polar bear management.

#### **Defense kill**

Occurs when a polar bear that has come into contact with humans, their property, or both, and is killed to preserve the life of one or more persons, or when public safety or property are at stake. Bears killed in defense of life or property are counted towards Total Allowable Harvest (TAH) for a jurisdiction. In Manitoba, where there is no TAH, defense kills are considered in the models related to TAH and defense kills for Nunavut (given that the Western Hudson subpopulation is shared between Manitoba and Nunavut).

#### **Denning habitat**

Habitat throughout the circumpolar Arctic where female polar bears dig maternity dens within which their cubs are birthed. Dens are dug into snowdrifts either on sea ice or land. In the southern portions of the range they may be dug into frozen peat. Females often show fidelity to general areas, but not specific den sites.

#### **Guaranteed Harvest Level**

As set out in the James Bay and Northern Quebec Agreement (1975), it is the minimum number of individuals of polar bear that are to be allocated for exclusive use of the First Nations Peoples and Inuit, based upon harvest levels by the First Nations Peoples and Inuit from 1973 to 1980.

**Harvest**

To take or kill a polar bear. Any harvested bear is included in the Total Allowable Harvest for a given subpopulation/jurisdiction and is therefore counted towards the annual total number of kills.

**Land claims agreement**

A land claims agreement within the meaning of section 35 of the Constitution Act, 1982

**Quota**

The maximum number of polar bear that can be legally killed on an annual basis, based on population estimates, subpopulation boundary definitions, and sound management decisions. Quotas are allocated to communities within jurisdictions.

**Subpopulation**

A subpopulation is typically defined as the number of polar bear within a geographic region delineated based on the best available scientific and Traditional Knowledge related to the movements and genetics of polar bear, as well as management considerations.

**Subpopulation size**

The estimated number of polar bear residing within a defined area, and considering both scientific data and Traditional Knowledge.

**Target Population Size**

Population levels that enable polar bear to be sustained across their range providing as much ecological and socio-cultural benefits as possible while minimizing human-bear conflicts.

**Total Allowable Harvest**

The amount/number of wildlife that can be lawfully harvested from a population or stock within a set period of time (e.g. a hunting season). Synonymous with harvest quota.

**Wildlife Management Board**

See Aboriginal Authority.

